

(GOSS NET 1)

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off until after the burn was completed; and some of the other things that we've got coming up, about 9 hours you have oxygen fuel cell purge; and we've already mentioned the deletion of the star landmark sightings. From 10 to 11 we have put aside for the burn preparations. And a final score is 31 to 20.

00 08 15 40 CDR Cleveland won over Dallas, huh?

00 08 15 43 CC How about that?

00 08 15 49 CDR Houston, how do the circuit margins on the S-band look as compared to your preflight calculations?

00 08 16 35 CC Okay, Apollo 8. It's a little bit early to give you any real numbers on your COMM performance. Looks like it's working as good as predicted, and everything else seems to be doing better, so this may be doing better, too, after we have done our next COMM checks some of these other things will have a better hack on; I can give you a quantitative answer to your question.

00 08 16 56 CDR Roger.

00 08 24 23 LMP Houston, Apollo 8. How do you read?

00 08 24 26 CC Loud and clear, Apollo 8.

00 08 24 29 LMP Roger. Sure got a nice view of the earth from here. We can see Baja California and about where San Diego ought to be.

"flight pool"
in PAO
Community

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00 08 24 40 CC Very good.

00 08 24 44 LMP I can't see my dad's flagpole out there today, though.

00 08 24 48 CC We'll tell the doctors about that.

00 08 48 40 CC Apollo 8, Houston.

00 08 48 43 CDR Go ahead, Houston.

00 08 48 45 CC Okay. We dropped off of high gain on the OMNI there for a bit and went to a low bit rate, and we're getting ready to command you back to a high bit rate. Do you want us to keep you posted every time we change tape speeds?

00 08 49 05 CDR We're not recording now anyway, Houston.

00 08 49 08 CC Roger. Understand; but when we got to high bit rate, do you want to be kept informed every time we transfer? We hadn't planned on it.

00 08 49 20 CDR If we think if we need to recorder, we'll ask you on that deal.

00 08 49 24 CC Okay.

00 09 09 34 CDR Apollo 8.

00 09 09 37 CC Go ahead.

00 09 09 40 CDR Roger. How does your tracking look on us?

00 09 09 44 F Fido, FLIGHT.

00 09 10 13 CC Apollo 8, tracking still in progress and a little too soon to give you a firm answer on the results, but everything looks nominal so far.

00 09 10 26 LMP Is it working okay?

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0 00 09 10 28 CC Seems to be.

00 09 12 05 CC Apollo 8.

00 09 12 07 LMP Go ahead.

00 09 10 09 CC Okay. Sometime when it's convenient for you now, I would like to see an oxygen fuel cell purge. And do you have any estimate on when you might be getting around to this COMM test?

00 09 10 24 LMP Right now we're right in the middle of trying to get something to eat, Ken. We can - I guess we can do the fuel cell purge.

00 09 10 36 CC Apollo 8, there's no rush. Just didn't know what you were doing at the time and - Give us a call when you have a free moment; we'll pick up.

00 09 10 50 LMP We can start the O₂ purge now, if you wish.

00 09 10 57 CC Okay. That'd be fine, and I'll keep track of the time for you.

00 09 13 00 LMP Okay. That'd be good. Now I'll turn on O₂ now on fuel cell 1.

00 09 13 05 CC Okay. Thank you.

00 09 15 41 CC Apollo 8, Houston. That's about 2 minutes on your first fuel cell.

00 09 15 47 CDR Roger. It's up, and number 2 is on now.

00 09 15 50 CC Roger.

00 09 17 31 CMP Houston, Apollo 8.

00 09 17 33 CC Houston. Go ahead.

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00 09 17 35

OMP

While I'm waiting for my turn at the water gun, I might give some comments on the optics. There seems to be quite a band of light that goes all way across the scanning telescope anywhere in the vicinity of the sun. Just a little while ago we were in the position where I could pick up the moon in the scanning telescope. And then I looked at it in the sextant and the sky - the space around the moon was a very light blue, just about as light blue as we have it back on earth. And it's not black - that sun angle with the moon.

00 09 18 20

CC

Understand. This light blue was - showed up in the sextant.

00 09 18 25

OMP

That's affirmative. I maneuvered the optics so I could pick up the moon in the sextant, and the - the space around the moon is light blue.

00 09 18 37

CC

Roger. Can you make any kind of estimate about the proportion of the radius, how far out that seems to extend?

00 09 18 46

OMP

Well, it extends the full length of the sextant. Actually, I could see us coming as we moved across, because the band of light in the scanning telescope cut across where the moon was, and it moved in this area. I believe it's caused by the refraction of light inside the optics themselves.

00 09 19 05

CC

Roger.

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00 09 19 09

CMP

Also, I've been occasionally looking out to see if I could see stars at various sun angles, and at this particular altitude, it's very difficult. In the scanning telescope the sun is very bright and the earth is very bright. And if I looked at the earth and try to look for stars, I lose my dark adaptation very quickly.

00 09 19 35

CC

Roger. Do you have any problems seeing the moon?

00 09 19 41

CMP

No problem seeing the moon. When I looked for the star landmark line of sight, I - It's a very thin crescent, but it was very visible.

00 09 19 53

CC

Roger. Does the area illuminated in earthshine show up?

00 09 20 00

CMP

Not at this altitude, and that's strange. I thought I could see that. At this altitude, the refraction of the light in the optics themselves, due to the reflection of the sunlight I suspect, or earth's light, completely blanked out the dark side of the moon to this altitude.

00 09 20 17

CC

How about that.

00 09 20 23

CDR

Maybe we have an atmosphere around the moon.

00 09 21 11

CC

Okay, Apollo 8. Looks like that ought to terminate the fuel cell purging.

00 09 21 16

LMP

Roger.

END OF TAPE

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00 09 44 40	CDR	Houston, Apollo 8.
00 09 44 45	CC	Go ahead, Apollo 8.
00 08 44 47	CDR	Do you want to get started here around 10 hours? Is that what you said?
00 08 44 54	CC	Well, what we had planned was to use the 10- to 11-hour period as your preburn preparation just as we would have done normally, and - -
00 09 45 04	CDR	That's fine. We can go ahead and do that.
00 09 45 13	CC	- - and if you can work in this COMM check before that, it would be desirable, but that's not a constraint.
00 09 45 20	CDR	What do you want in the way of a COMM check, George?
00 09 45 27	CDR	Again, what do you want?
00 09 45 29	CC	Okay. What we've got here is a couple of DTC COMM checks. We'll be switching around to five different modes, and only one of them will interrupt your activities. In that case, we'll be switching to the uplink backup voice, and that's the one time that you might lose temporary uplink voice COMM. You'll have downlink voice COMM throughout the entire procedure, and it ought to take you, I guess, 10 to 15 minutes MAX, the only requirement being that we should stay on a high-gain antenna.
00 09 46 05	CDR	Why don't we go ahead and start now then?

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00 09 46 07 CC Okay. That sounds pretty good.

00 09 46 08 CDR - whenever -

00 09 47 20 CC Okay, Apollo 8. Another couple of minutes and we'll be ready to go into our - our COMM check. And, for your information, looks like the signal strength is 3 to 4 dB better than expected on the wide range, on the WIDE BEAM mode, and approximately that gives you 1.4 increase in your range.

00 09 47 46 CDR Roger. Let's not increase it by 1.4 more, though.

00 09 47 50 CC Okay.

00 09 48 08 CC Something else you might take a look at: as you go through the PTC, we have some who would like to know if you can see any detectable effect on the windows in the form of their fogging. Particularly, does the sun seem to vary fog intensity or does it increase it or decrease it or make it go in patches or anything like that that you might be able to notice?

00 09 48 40 CDR The sun doesn't seem to change it much; however, the different incidences of the sun's rays magnify the - the fogging, or at least change it.

00 09 49 04 CC Okay, Apollo 8. I'm sorry. Would you say again, please?

00 09 49 08 CDR The sun doesn't seem to have any effect on the windows themselves, but the different inci -

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angles of incidence of the sun rays change the relative amount of obscuration caused by the fogging.

00 09 49 24 CC

Okay.

00 09 50 05 CC

Okay, Apollo 8. We're ready to go into the COMM check now, and it's your option. We can call out switches and let you position them, or we can command it from the ground. In either event, there will be a couple of switches that you'll have to throw for us.

00 09 50 24 CDR

We'll have to command them, and we'll throw what we have - what you want.

00 09 50 29 CC

Okay. And I'll keep you posted on what we're doing. The first test is an uplink voice and ranging with full downlink which is essentially what you're doing right now, is to be used for a baseline.

00 09 50 44 CDR

Roger.

00 09 51 12 CC

Okay. We're starting on test number 1, and if you would verify that S-band NORMAL mode switch is in VOICE.

00 09 51 22 CDR

Roger. We're in VOICE.

00 09 51 24 CC

Okay.

00 09 51 25 CDR

... Charlie.

00 09 51 31 CC

And the up-telemetry DATA to DATA.

00 09 51 36 CDR

Roger. DATA.

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00 09 51 49 CC Okay. And up-telemetry COMMAND to NORMAL.

00 09 51 55 CDR Normal.

00 09 51 57 CC Roger. How about high-gain antenna track to AUTO?

00 09 52 04 CDR We're on OMNI D now; we've got to wait till we get around the other way.

00 09 52 10 CC Okay. What's your estimate?

00 09 52 19 CDR We're at 15 minutes from it.

00 09 52 25 CC Okay.

00 09 52 34 CDR Maybe we'd better hold the COMM check till after the midcourse, because we'd better get fired here at 10 if we want to burn at 9.

00 09 52 43 CC That's affirm. We're viewing that right now.

00 09 52 47 CDR ... means we're on two vertical level.

00 09 52 55 CC Okay, Apollo 8. We're postponing the COMM test until after the burn.

00 09 53 02 CDR Thank you.

00 09 54 20 CDR Houston, Apollo 8. Are you ready to go - for us to go through with the P52 now?

00 09 54 35 CC That's negative, Apollo 8. We would like to update things first, and we're going to give you a LM state vector and then an external DELTA-V.

00 09 54 43 CDR Roger.

00 09 54 44 CC And with POO in ACCEPT while we'll go ahead and work on that.

00 09 54 50 CDR Roger.

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00 09 57 18 CC Apollo 8, Houston.

00 09 57 20 CDR Go ahead.

00 09 57 22 CC Okay. We've got your PAD's. We're ready to read up to you. And we're standing by to flank your state vector and external DELTA-V whenever you're ready to give us ACCEPT.

00 09 57 36 CDR Roger. Just stand by one, and we will get the PAD from you.

00 09 57 48 CDR And we will put in - TM in ACCEPT now - at this time.

00 09 57 53 CC Roger.

00 09 58 10 CDR We're ready to copy the PAD.

00 09 58 21 CC Okay, Apollo 8. I didn't copy that last one. We are sending you state vector up now.

00 09 58 26 CDR Roger. We say we are ready to copy the PAD.

00 09 58 29 CC Okay. The first PAD will be a maneuver PAD, MCC one, and this will be an SPS/G&N beginning with the weight, 63295 minus 163 plus 129 010 59 58 30 plus 001 36 minus 00 045 plus 002 02 345 188 343 999 99 plus 016 85 002 48 002 001 86 23 2013 164 012 up 276, left 04, November Alfa for the remainder of that column. In the comments: north stars; 068 097 356, a no ullage start, and a single bank burn on bank Alfa. Over.

00 10 01 10 CDR Houston, Apollo 8. MCC 1 maneuvers: SPS/G&N 63295 minus 163 plus 129 010 59 5830 plus 00136

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minus 00045 plus 00202 345 188 343 all 9's
plus 01685 000248 002 00186 23 2013 164 012,
up 27-6, left 04 November Alfa for the remainder.
North set stars, roll 068, pitch 097, yaw 356,
no ullage single bank - bank Alfa.

00 10 02 29	CC	Roger, Apollo 8. That's correct. And I have a TLI plus - 11 PAD for you.
00 10 03 02	CDR	Roger. Go ahead.
00 10 03 16	CDR	Houston, Apollo 8. Go ahead.
00 10 03 18	CC	Roger, Apollo 8. Loud and clear now. Are you ready to copy?
00 10 03 23	CDR	Roger. Ready to copy.
00 10 03 24	CC	Okay. This is a TLI plus 11, SPS/G&N. This assumes a midcourse correction number 1: 631 40 minus 163, plus 129 013 56 48 97, minus 005, 99, plus 00 00 0, plus 47016, 177 143 000 November Alfa, plus 001 97 47 020 5 51 468 18 12 12 83 257 023, up 263, left 17, plus 11 95, minus 165 00 126 83 356 08 050 47 05, north stars; 068 097 356, no ullage. For the fast return P37 DELTA-V, 7900 for the Indian Ocean, high speed procedure not required for the MS. This assumes midcourse correction 1. Over.
00 10 06 22	CDR	Stand by.
00 10 06 23	CC	Roger.
00 10 06 40	CDR	Houston, Apollo 8. To the readback. Are you ready?

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00 10 06 43 CC Go ahead.

00 10 06 44 BC TLI plus 11 SPS/G&N 63140, minus 163, plus 129
13 56 4897, minus 00599, plus 00000. And I believe
it's plus 47016.

00 10 07 14 CC Affirmative.

00 10 07 20 CDR 177 143 000 NA, plus 00197, 47020 551 46818 12
128.3 257 023, up 263, left 17, plus 1195, minus
16500, plus 126 23 35608 0504705, the north
set, roll 68, pitch 97, yaw 356, no ullage,
P37 high speed, 7900 Indian Ocean, and high
speed procedures for the MS are not required;
assumed MCC 1.

00 10 08 42 CC Roger, Apollo 8. Two corrections on the GETI.
The hour's 013. Range to go EMS.

00 10 08 57 CDR 013.

00 10 09 00 CC Roger. Copy that and the rings to go in the
EMS 126 83. Over.

00 10 09 11 CDR 12683.

00 10 09 13 CC That's correct.

00 10 09 16 CDR Houston, this is Apollo 8. Be advised that we
doubted that it would be possible to use the
stars to get our backup alignment. We haven't
been able to see any stars through the scanning
telescope yet.

00 10 09 30 CC Roger.

00 10 09 40 CC Okay. And another comment for you, Apollo 8;
like for you to use VERB 37 to select POO and

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then wait for your computer activity light to
go off prior to unzip of the LM NAV to CSM SLA.

00 10 09 55

CDR

Roger. You ready for us to do that now?

00 10 10 00

CC

That's affirm.

00 10 11 00

CDR

Houston, this is Apollo 8.

00 10 11 03

CC

Go ahead.

00 10 11 05

CDR

Okay. Now we'll go ahead and start back towards
the flight plan around 8 hours here of T52, right?

00 10 11 14

CC

That's affirm.

00 10 11 19

CDR

Well, we - we have transferred - wait - we've
transferred the state vector to the LM SLA
already before we did a 52. So we're going to
do the 52 now.

00 10 11 43

CC

Okay, Apollo 8. That's good procedure and -

00 10 16 13

CC

Apollo 8, Houston.

00 10 16 16

CDR

Go ahead, Houston.

00 10 16 18

CC

Roger. Will you check your up-telemetry switch
to BLOCK, please?

00 10 16 24

CDR

Thank you. It's in BLOCK.

00 10 29 24

CC

Apollo 8, Houston.

00 10 29 27

CDR

Go ahead, Houston. Apollo 8.

00 10 29 30

CC

Okay. We've got a telescope alignment if you'd
like to give it a try. Your sextant star is
still good, but if you had problems with that,
folks have worked out that if you look through
the telescope at 10:35, we have a shaft and

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trunnion that should point you at the center of the earth, if you would like to give that one a try.

00 10 29 52	CDR	Okay.
00 10 29 55	CC	Okay. At 10:35, the shaft angle 006.2, trunnion 18.9. Over.
00 10 30 15	CDR	Roger. 10:35: shaft 006.2, trunnion 18.9.
00 10 30 20	CC	That's affirmative.
00 10 32 28	CC	Apollo 8, Houston.
00 10 32 32	CDR	Go ahead.
00 10 32 34	CC	Okay. We'd like to get a fan - a cryo fan cycle in here before the burn. About 1 minute on each should be fine.
00 10 32 44	IMP	Roger. I've already given 2 minutes on H ₂ 1 and 2 and O ₂ 1, and I've just started O ₂ 2.
00 10 32 52	CC	Roger. Thank you.
00 10 34 17	CC	Apollo 8, Houston. We'd like to dump your tape prior to the burn.
00 10 34 26	IMP	Roger. It's only been running here about 15 minutes.
00 10 34 43	CC	Okay, Apollo 8. That's - that's correct. You're on high bit rate, and we're afraid you may run out before the burn, so we'd like to dump it, and give it back to you with a full load before the burn.
00 10 35 00	IMP	Roger. And give us a comment on the voice quality.
00 10 35 04	CC	Wilco.

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00 10 36 49 IMP Houston, Apollo 8.

00 10 36 51 CC Go ahead.

00 10 36 54 IMP Roger. We plan to stop charging battery B about another 5 minutes. You concur?

00 10 37 05 CC That's affirmative.

00 10 37 07 IMP Okay. You might just remind us.

00 10 37 10 CC Wilco.

00 10 43 08 CC Apollo 8.

00 10 43 12 CDR This is 8. Go ahead.

00 10 43 20 CDR Go ahead, Houston. You were cut out.

00 10 43 22 CC Okay, Apollo 8. All your systems are GO, and we were about to tell you you can go ahead and terminate the battery charge, and you beat us to the punch.

00 10 43 35 CDR I read your mind, and it's showing 37 volts right now.

00 10 43 40 CC Okay.

00 10 53 57 CC Apollo 8, Houston. If you'll go high bit rate, we'll give you a tape recorder back to your command.

00 10 54 43 CC Apollo 8, Houston. If you'll put your high bit rate on, we'll give you a tape recorder back.

00 10 54 49 CDR Roger.

00 10 56 50 CDR Houston, did you give us a tape back? Over.

00 10 57 06 CC Affirmative, Apollo 8.

00 10 57 09 CDR Apollo 8's COMMAND RESET to get tape motion, we're now in NORMAL.

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00 10 57 20 CC Roger.

00 10 58 42 CC Apollo 8, stand by for a mark at 1 minute.

00 10 58 48 CDR Roger. Apollo 8 standing by.

00 10 58 49 CC Ten seconds.

00 10 58 54 CC Five seconds.

00 10 58 57 CC 2, 1 -

00 10 58 59 CC MARK.

00 10 59 00 CC One minute.

00 10 59 01 CDR Roger.

00 11 02 43 CDR Houston, Apollo 8.

00 11 02 45 CC Go ahead.

00 11 02 48 CDR Roger. The burn time was on time - about 2 seconds; we have residual 4.4 X. We burned it out to 0.2. Attitudes are nominal. The DELTA-V_C before the residuals were taken out was a minus 2.4. I have transferred the state vector to the LM's slot in VERB 66.

00 11 03 14 CC Roger. Copy 4.4 for X and 2.4 on Z. And negative residual on Y prior to the trim. Is that affirm?

00 11 03 24 CDR That's affirmative, and we took out the 4.4 residual down to 0.2.

00 11 03 29 CC Roger.

00 11 04 13 LMP Houston, Apollo 8. Do you want us to start charging battery A, now?

00 11 04 20 CC Stand by.

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00 11 04 35 CC Apollo 8. Let's go back to battery Bravo, and we'll finish that one off before we start in on Alfa.

00 11 04 43 LMP Roger. Battery Bravo.

00 11 04 52 CDR Houston, Apollo 8. Do you want us to maneuver to any particular attitude for a water dump, or do you want us to go to PTC attitude?

00 11 05 02 CC Okay. Let's go PTC.

00 11 05 04 CDR And give me the angles, please.

END OF TAPE

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-- -- -- -- CC Okay, Apollo 8. Let's do the same angles we had before: that's pitch 242 and yaw 20 on the PTC attitude.

00 11 05 40 CMP 242, yaw 20. Roger.

00 11 07 50 CMP Houston, we're preparing to dump our waste water now.

00 11 07 54 CC Roger.

00 11 10 41 CDR Houston, Apollo 8.

00 11 10 44 CC Go ahead, 8.

00 11 10 47 CDR We noticed on our systems test battery vent pressure that when we opened the battery vent valve, we get an immediate drop-off to pressure which nulls out at about two-tenths of 2 - to three-tenths of a volt. And we think this is zero and the battery manifold. Do you concur?

00 11 11 08 CC Okay. Stand by. ... stand by one, and let's check it out.

00 11 11 17 CC Apollo 8, I cut you out there. What did you say on the last one?

00 11 11 22 CDR It looks like probably that zero psi corresponds to about three-tenths of a volt on the test meter. We've had it happen a couple of times, where the pressure would drop rapidly to this setting, as if it were zero. Over.

00 11 11 37 CC Roger. We'll look at our data here and let you know what we see. Are you going ahead with the water dump now?

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00 11 11 49 CDR Roger. We'd - we're pausing here on the water dump, though, just to verify that the battery vent - the line is clear as indicated by a battery vent pressure of zero.

00 11 12 03 CC Okay. Stand by.

00 11 20 10 CC Apollo 8, Houston.

00 11 20 13 CDR Go ahead, Houston.

00 11 20 15 CC Okay. Number one on the list of things is that the flight plan shows CDR should hit the sack. Number two, kind of a summary of your burn. All your SPS and systems look GO. The trajectory shows that you have a CPA with a mode of 69.67 miles and the time of pericynthion is 69 plus 10. You do have a capture on a good free return. It's a little bit early to completely evaluate the trajectory for corridor control. You'll have no update to the TLI plus 11 block data. After looking through the CAL curves, it looks like the battery-vent pressure is actually zero at 0.2 to 0.3 volts, so that - we agree with you there, and you can go ahead with the water dump. We still have the COMM check to do whenever we get ourselves in a good high gain look angle and whenever it's convenient for you. Over.

00 11 21 26 CDR Thank you very much. That was a very fine resume you sent in. We're right now in the process of

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trying to dump out the water and the UCDA's and so on and so on. So we'll get with you on the high gain as soon as we can.

00 11 21 41 CC Okay. Good burn.

00 11 21 44 CDR Houston, what do you want to dump the waste tank down to?

00 11 22 01 CC Apollo 8, I would like you to dump the waste tank to 25 percent.

00 11 22 08 CDR Okay.

00 11 27 07 IMP Hey, we're dumping now, Houston.

00 11 27 09 CC Okay. Thank you.

00 11 27 12 IMP We finally got some stars to see.

00 11 32 00 CC Apollo 8, Houston.

00 11 32 03 CDR Go ahead, Houston. Apollo 8.

00 11 32 05 CC Roger. Do you folks have your WATER QUANTITY switch in the POTABLE or the WASTE WATER TANK position now?

00 11 32 14 CDR We're in the WASTE TANK position now, and we're dumping UCDA's first, Houston.

00 11 32 20 CC Okay. We weren't watching any waste quantity decrease, and it looked like the nozzle temps indicated that something was going on, and we were trying to dope out what was going on.

00 11 32 30 CDR Well, there's a lot of stuff going out I'll tell you. How do nozzle temps look?

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00 11 32 41 CC Oh, about 81.

00 11 32 44 CDR Okay. We'll keep on going then.

00 11 40 37 LMP Okay, Houston. We're going to dump the waste tank on down to about 25 percent.

00 11 40 44 CC Okay. Thank you.

00 11 40 57 LMP Houston, Apollo 8. Do you copy?

00 11 40 59 CC Affirmative, Apollo 8.

00 11 41 02 LMP Okay. Tell Zeke Thomas to wake up and keep an eye on the waste tank servicing.

00 11 41 16 CC It'll take a minute to think of something appropriate.

00 11 41 23 LMP You're slowing down.

00 11 41 28 CC So are you guys.

00 11 46 53 LMP How are the nozzle temperatures looking, Houston?

00 11 46 59 CC Stand by.

00 11 49 16 LMP Man, you're looking pretty small down there now, Houston.

00 11 49 24 CC We're carrying a big stick, though.

00 11 49 30 LMP Just barely make out Clear Lake.

00 11 49 40 CC Your nozzle temperatures have dropped from about 94 to around 66.

00 11 49 49 LMP Okay. I'm showing just a little bit above 50 percent here, and we'll keep on going, and if it looks too cold, give us a call.

00 11 49 59 CC Okay. We'll do that.

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00 11 50 30 IMP Houston, we had a momentary O₂ high flow, but we think it's due to all the purging of the water lines we're doing here in the cabin.

00 11 50 40 CC Roger. We concur.

00 11 53 20 CC Apollo 8, Houston. We show you down to 25 percent of your waste water.

00 11 53 26 IMP Okay. I'm just about 28, Houston. Stand by just a bit.

00 11 54 02 IMP Okay. Waste dump stopped and then purge again.

00 11 54 05 CC Understand. Roger. Waste dump stopped.

00 11 54 08 IMP Roger.

00 11 59 50 IMP Houston, we're on a high gain, and it might be a good time to try your COMM check.

00 12 00 59 CC Apollo 8, we're going to go ahead and crank up to a COMM test now, and we will be a little bit late on your update for 12 hours.

00 12 01 10 IMP Okay.

00 12 01 11 CC Do you still want our - have us command as much as we can on the ground, or would you like to move the switches yourself?

00 12 01 20 IMP Oh, you can have the fun of doing it.

00 12 01 23 CC Sounds like you're dragging there.

00 12 01 30 IMP ... you suggest a ... We're using 1/250 on at f:11 on CEX and CMAX for earth shots. Do you verify? Over.

00 12 01 43 CC Okay. You got going before I got my pencil up. How about saying it again?

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00 12 01 49 IMP f:11 and 1/250 for CEX 16mm and C 70mm.

00 12 01 58 CC Okay. Thank you.

00 12 02 01 IMP How about running in by the back room boys. My light meter doesn't seem to be helping out too much.

00 12 02 07 CC Okay.

00 12 03 01 CC Okay, Apollo 8. We're starting in - setting up for our first COMM test. This is going to be an uplink voice, ranging, and full downlink, which is not anything really different than what you have on board. I would like for you to verify that the S-band NORMAL MODE VOICE switch is in VOICE.

00 12 03 22 IMP Roger. VOICE.

00 12 03 24 CC Okay. And the up-telemetry DATA to DATA.

00 12 03 28 IMP Roger. DATA.

00 12 03 33 CC Up-telemetry COMMAND in NORMAL.

00 12 03 36 IMP Roger. NORMAL.

00 12 03 38 CC High-gain antenna to AUTO TRACK.

00 12 03 42 CC Correction. That's --

00 12 03 43 IMP AUTO.

00 12 03 46 IMP We're in AUTO WIDE BEAM, and you can go ahead and dump the tape.

00 12 03 50 CC Okay. I'd like for you to go to NARROW BEAM.

00 12 03 54 IMP Okay. Going to NARROW BEAM now.

00 12 03 57 CC Roger.

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00 12 04 01 CC And I'll give you a call when we get ready to work on the tape.

00 12 04 05 IMP Okay. We're still in PTC, so you're only going to have it for about 10 or 15 minutes.

00 12 04 12 CC Okay. We've had some problems with our displays, and I think they're straightened out now, but you may have to keep us advised if we run out of limits in case we display again.

00 12 04 22 IMP Roger.

00 12 04 38 CC Say, while we're standing by here, Apollo 8, the service module quantities that we had listed - we're going to try to update them, if you want to call out your quantities. Have you checked them with your charts?

00 12 04 54 IMP Negative. I haven't gotten around to that. Stand by.

00 12 04 56 CC Okay. There's no hurry on that. Just wondered if you had done it; we will check it against what we've got on our norma-gram.

00 12 05 17 IMP I'm showing a SPS helium pressure, about 3570, indicated on board.

00 12 05 29 CC Roger.

00 12 05 31 IMP And fuel LOX tank pressures are 177 and 176, respectively.

00 12 05 40 CC Okay.

00 12 05 44 IMP M2 A is 2400, B 2500.

00 12 05 52 CC Okay.

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00 12 06 12 CC Okay. And our back room tells you that you've got the right F stop.

00 12 06 19 LMP Okay. Then we'll keep using it.

00 12 06 27 LMP This PTC attitude really isn't the greatest for taking pictures of the earth.

00 12 06 32 CC Roger.

00 12 06 34 LMP Or of the moon.

00 12 06 46 CC Apollo 8, kinda stand by for a burst of noise as we change configurations on the ground. We're going into test 1. You'll still have up and downlink, and we'll be in this mode for 2 minutes, but you may hear some burst of noise as we change.

00 12 07 03 LMP Roger.

00 12 08 46 CC Okay, Apollo 8. We're in the middle of our first test, and how about giving me a voice check.

00 12 08 53 LMP Roger, Houston. This is Apollo 8. One, two, three, four, five, five, four, three, two, one. Apollo 8, out.

00 12 08 59 CC Roger. And read you loud and clear. This COMM is unbelievably good.

00 12 09 05 LMP Good.

00 12 10 21 CC Okay, Apollo 8. We've finished the first test, and we're now going to change the uplink mode to UPLINK COMMAND AND RANGING, and we'll be going without upvoice. We'll be in this mode for 2-1/2 minutes and will be sending a test